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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|------------------------|-------------|----------------------|---------------------|------------------|
| 10/774,632 | 02/10/2004 | Minefumi Ouchi | 36856.1212 | 9415 |
| 35510 | 7590 | 05/23/2005 | EXAMINER | |
| KEATING & BENNETT, LLP | | | SUMMONS, BARBARA | |
| 10400 EATON PLACE | | | | |
| SUITE 312 | | | ART UNIT | |
| FAIRFAX, VA 22030 | | | PAPER NUMBER | |
| | | | 2817 | |

DATE MAILED: 05/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|------------------------------|--|
| Office Action Summary | Application No. 10/774,632 | Applicant(s) OUCHI ET AL. | |
| | Examiner Barbara Summons | Art Unit 2817 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-18,22-24,28-30 and 34-36 is/are allowed.
- 6) ☒ Claim(s) 1-3,25-27 and 31-33 is/are rejected.
- 7) ☒ Claim(s) 4-9 and 19-21 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>2/10/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 31-33 are rejected under 35 U.S.C. § 102(b) as being anticipated by Takamine U.S. 2002/0000898.

Fig. 7 of Takamine discloses a modified example of the first preferred embodiment (see section [0030]) that is a surface acoustic wave (SAW) device comprising: a first longitudinally coupled resonator type SAW element 3A with three interdigital transducers (IDTs) 6-8; a second longitudinally coupled resonator type SAW element 3B with three IDTs 6-8 that is cascaded with the first SAW element on a piezoelectric substrate (not shown see e.g. section [0119]); each of the SAW elements having at least one IDT with a narrow pitch electrode finger portion located near the adjacent IDT, wherein the number and/or the pitch of the electrode fingers of the narrow pitch electrode finger portion of the first SAW element 3A are different from the number and/or the pitch of the electrode fingers of the narrow pitch electrode finger portion of the second SAW element (see section [0018], lines 1-9), wherein “and/or” indicates that either one of the number (see claim 2) or pitch (see claim 3), or both the number and pitch (see claim 1) of the electrode fingers in the narrow pitch electrode finger portions are different. Regarding claims 31-33, see Figs. 15 and 16 and the discussion thereof.

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3. Claims 3, 27 and 33 are rejected under 35 U.S.C. § 102(b) as being anticipated by Takamine U.S. 2002/0017969.

Fig. 1 of Takamine discloses a first preferred embodiment of a SAW device comprising: a first longitudinally coupled resonator type SAW element 11 with three IDTs 13-15; a second longitudinally coupled resonator type SAW element 12 with three IDTs 18-20 cascaded with the first SAW element on a piezoelectric substrate 2; each of the SAW elements 11 and 12 has at least one IDT with a narrow pitch electrode finger portion located near the adjacent IDT; and wherein a sixth preferred embodiment is disclosed that is similar to the first preferred embodiment (see section [0171]) except that the pitch of the electrode fingers of the narrow pitch electrode finger portion of the first SAW element 11 is different from the pitch of the electrode fingers of the narrow pitch electrode finger portion of the second SAW element (see sections [0173] and [0176]), providing a widened pass band. Regarding claim 27, see Fig. 27. Regarding claim 33, see Fig. 35.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 25-27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Takamine U.S. 2002/0000898 in view of Takamine U.S. 2002/0017969.

Takamine '898 teaches the invention as discussed above, except for a balanced to unbalanced conversion function in the cascade connected embodiment of Fig. 7.

Takamine '969 discloses that it would have been well known to provide balanced to unbalanced conversion in SAW filters with a two-stage cascade structure (Fig. 27).

Consequently, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the SAW device of Takamine '898 (see Fig. 7) by having provided it with a balanced to unbalanced conversion function as taught, for example, by Takamine '969 because such an obvious modification would have been routinely made in the art as suggested by Takamine '969 (see section [0184]) depending upon the intended use of the filter, that is, if it were to be connected to balanced or unbalanced peripheral devices, as implicitly suggested by Takamine '969 in Fig. 35 with filters 164 and 168 having balanced/unbalanced conversion while filter 169 does not.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent

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and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 3, 27 and 33 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 17 of U.S. Patent No. 6,762,657. Although the conflicting claims are not identical, they are not patentably distinct from each other because the "first portion" in the '657 Patent is the same as the narrow pitch electrode finger portion (see '657 claim 1, the last two lines thereof) of claim 3 of the instant application, and the "period" in the '657 Patent is the same, or proportional to, the pitch of claim 3 of the instant application. Regarding claims 27 and 33, the communication system of claim 33 is only an obvious intended use well known by one of ordinary skill, and the balanced/unbalanced conversion of claim 27 would have been an obvious modification routine to one of ordinary skill in the art based upon the intended use of the SAW device.

8. Claims 1-3, 25-27 and 31-33 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 23, 24, 29, 30, 31, 37 and 38 of U.S. Patent No. 6,621,380. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 23, 24, 29, 30,

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31, 37 and 38 of the '380 Patent recite all the limitations of claims 3, 1, 27, 33, 2, 26 and 32, respectively, of the instant application, except for explicitly reciting the first and second SAW filters connected in cascade, wherein filters can only be connected in series or parallel and series cascading would have been an obvious well known connection of such SAW filters to one of ordinary skill in the art. Regarding claims 25 and 31 of the instant application, the communication system of claim 31 is only an obvious intended use well known by one of ordinary skill, and the balanced/unbalanced conversion of claim 25 would have been an obvious modification routine to one of ordinary skill in the art based upon the intended use of the SAW device.

Allowable Subject Matter

9. Claims 10-18, 22-24, 28-30 and 34-36 are allowable over the prior art of record.

10. Claims 4-9 and 19-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter:

Even though Takamine U.S. 2002/0017969 discloses series connected SAW filters with a different pitch in the narrow finger portion (see sections [0171]-[0176]) and shows a structure in Fig. 30 with four SAW elements similar to Applicants' Fig. 1 (see claims 10-12), there is no disclosure in Takamine of the relationship of the pitch in the narrow pitch electrode finger portions between all four SAW elements. Therefore, a

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SAW device having the recited relationships of narrow pitch electrode portions of four SAW elements is not taught or fairly suggested by the prior art of record.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Takamine U.S. 6,717,489 discloses a SAW device with longitudinally coupled resonator type SAW elements having narrow pitch electrode portions, and discloses (Fig. 1) two parallel connected SAW elements 5 and 6 having different electrode pitches in their narrow pitch electrode portions (see col. 18, lines 61-67).

Ouchi et al. U.S. 6,771,145 discloses a SAW device with different input and output impedances (see the abstract) and two parallel connected longitudinally coupled resonator type SAW elements with narrow pitch electrode portions.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara Summons whose telephone number is (571) 272-1771. The examiner can normally be reached on M-Th, M-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bob Pascal can be reached on (571) 271-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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May 17, 2005



**BARBARA SUMMONS
PRIMARY EXAMINER**